Desain Modul Pembelajaran Mandiri tentang Gerak Parabola pada Bidang Miring dengan Gesekan Udara

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Abstract. On the mechanics course especially on projectile motion material, the learning given by the lecturer tends to be focused on the plane surface without considerating the air resistance because of the limited time of the meetings. In fact, the projectile motion is influenced by the air resistance and it can also occur on the inclined surface. The purpose of this study is to design an independent learning module of projectile motion on inclined surface with air resistance which can be used as the structured assignment for undergraduate students. It also aims to investigate the effectiveness of the module toward the students' understanding. The process of making this learning module applies the ADDIE method (Analyze, Design, Develop, Implement, Evaluate). The analysis of the data used in determining the effectiveness of the module is qualitative descriptive. The effectiveness criteria are to gain minimum of 70% positive responses on the observation sheet and questionnaires. Based on the result of the observation sheet and questionnaires, the average percentage of the observation sheet is 83% and the average percentage of the questionnaires is 76%. Therefore, it can be concluded that this module is effective to be used with minor revision in guide sentences on the activity parts which gained score less than 70%.

Keywords: projectile motion, inclined surface, air resistance, learning module.